

CURRICULUM VITAE

Prof. BAHAR İNCE, Ph.D.

Boğaziçi Üniversitesi • Çevre Bilimleri Enstitüsü
34342 • Bebek-Istanbul, Türkiye
Tel: +90 212 359 70 16 • Faks: +90 212 257 50 33
E-posta: bahar.ince@boun.edu.tr
Web: <http://www.meg.boun.edu.tr/people1.html> •
http://www.iesc.boun.edu.tr/IESc/Bahar_Ince.html

Prof. Dr. Bahar Ince is the faculty member of Institute of Environmental Sciences of Boğaziçi University and the founding partner of ENGY Environment and Energy Technologies Biotechnology R&D Company established in 2011 in BUN Teknopark at Boğaziçi University, and is the director of R&D Division.

Prof. Dr. Bahar Ince has published over 400 articles, papers and technical reports and has been cited over 1,500. She currently has 2 TUBITAK project includes 1 international project (COST-Cooperation in Science and Technology) as advisor and 1 TUBITAK project as executive manager. In the past 10 years, 17 national and 8 international applied trainings, scientific and technical meetings have been organized for the applications of environmental, energy and molecular techniques in the field of biotechnology. There are over 1100 researchers and engineers from 22 different universities, 15 different countries and private sectors joined in these trainings and meetings. In this context, it has been pioneered in this country to create a platform where information and experience sharing can be actively carried out.

Prof. Dr. Bahar Ince founded ENGY Environment and Energy Technologies Biotechnology R&D company in 2011 at Boğaziçi University BUN Teknopark. The purpose of ENGY is to provide consultancy services for field engineering, to develop R&D projects for environmental, energy and biotechnology investments and creating the most suitable but economically achievable solutions in these fields by evaluating the knowledge and experiences of qualified experts with the use of the Universities's infrastructure facilities and site engineers. Currently, 1 patent has been granted and international patent applications have been made for 9 inventions that have been completed and passed pre-evaluation stages. In addition, a total of 332 non-cultured microorganisms have been identified and registered with international Gene Banks (www.ebi.ac.uk).

KEY QUALIFICATIONS

- Design, analysis, operational control of industrial and municipal wastewater treatment systems
- Microbial ecology and environmental microbiology
- Methanogenic archaeal diversity, their functions and interrelationships
- Microbial products in bioreactors.
- Waste to Energy Technologies (Biogas, Incineration, Gasification, Prolysis)
- Industrial Pollution and Control
- Environmental Biotechnology
- Water and Wastewater Management
- Identification of Microorganisms and Pathogenic Organisms in Water, Wastewater, Soil, Air, Sediments, Sludges by Morphological, Physiological and Molecular Methods

PROFESSIONAL EDUCATION AND ACADEMIC DEGREES

- 1990-1994 Ph.D. in Department of Civil Engineering, Division of Environmental Engineering, University of Newcastle upon Tyne, UK.
- 1989-1990 M.Sc. in Department of Civil Engineering, Division of Environmental Engineering, University of Newcastle upon Tyne, UK.
- 1984-1988 B.Sc. in Department of Environmental Engineering, METU, Ankara, Turkey.

PROFESSIONAL RECORDS

- 2002- Professor, Institute of Environmental Sciences, Bogazici University, Istanbul, Turkey.
- 1996-2002 Associate Professor, Institute of Environmental Sciences, Bogazici University, Istanbul, Turkey.
- 1995-1996 Assistant Professor, Department of Environmental Engineering, Istanbul University, Istanbul, Turkey.
- 1991-1994 Research Associate, Department of Civil Engineering, Division of Environmental Engineering, University of Newcastle upon Tyne, UK.
- 1988-1989 Teaching and Research Assistant, Department of Environmental Engineering, METU, Ankara, Turkey.

INTERNATIONAL SCI PAPERS

1. Ömer Uzun, Orhan İnce, Gözde Özbayram, Çağrı Akyol, Bahar Kasapgil Ince, "New approach to encapsulation of *Trametes versicolor* in calcium alginate beads: a promising biological pretreatment method for enhanced anaerobic digestion", Biomass Conversion and Biorefinery, DOI: 10.1007/s13399-021-01606-7, June 2021.

2. Gözde Özbayram, Orhan Ince, "Comparative Assessment of Biogas Production Potential of the Most Abundant Agro-residues in Turkey" DEU Science and Engineering Faculty 23(68):547-555, May 2021
3. O. Ince, Ç. Akyol, E. G. Özbayram, B. Tural, B. Ince, "Enhancing methane production from anaerobic co-digestion of cow manure and barley: Link between process parameters and microbial community dynamics", Environmental Progress & Sustainable Energy, 2020
4. Akyol, C., Ince, O., Bozan, M., Ozbayram, E.G., **Ince, B.**, "Biological pretreatment with *Trametes versicolor* to enhance methane production from lignocellulosic biomass: A metagenomic approach", Industrial Crops and Products, 2019
5. C. Akyol, O. Ince, **B. Ince**, "Crop-based composting of lignocellulosic digestates: Focus on bacterial and fungal diversity", Bioresource Technology DOI:10.1016/j.biortech.2019.121549, 2019
6. Akyol, O. Ince, M. Bozan, E.G.Ozbayram, **B. Ince**, "Fungal bioaugmentation of anaerobic digesters fed with lignocellulosic biomass: What to expect from anaerobic fungus *Orpinomyces* sp.", Bioresource Technology 277:1-10, DOI: 10.1016/j.biortech.2019.01.024., 2019
7. Akyol, E.G.Ozbayram, B. Demirel, T.T.Onay, O. Ince, **B. Ince**, "Linking Nano-ZnO Contamination to Microbial Community Profiling in Sanitary Landfill Simulations", Environmental Science and Pollution Research, 2019
8. O. Ince, E.G.Ozbayram, Çağrı Akyol, E.Irmak Erdem, Gulsah Gunel, **Bahar Ince**, "Bacterial Succession in the Thermophilic Phase of Composting of Anaerobic Digestates", Waste and Biomass Valorization, 2018
9. E.G. Ozbayram, O. Ince, **B. Ince**, H. Harms, S. Kleinsteuber, "Comparison of rumen and manure microbiomes and implications for the inoculation of anaerobic digesters", Microorganism, 2018
10. E. G. Özbayram, Ç. Akyol, **B. Ince**, C. Karakoç, O. Ince, 2018. Rumen bacteria at work: Bioaugmentation strategies to enhance biogas production from cow manure, Journal of Applied Microbiology, 124(2), 491-502, doi: 10.1111/jam.13668.
11. G. Turker, Ç. Akyol, O. Ince, S. Aydın, **B. Ince**, 2018. Operating conditions influence microbial community structures, elimination of the antibiotic resistance genes and metabolites during anaerobic digestion of cow manure in the presence of oxytetracycline. Ecotoxicology and Environmental Safety, 147, 349-356, doi: 10.1016/j.ecoenv.2017.08.044.
12. B. E. Öner, Ç. Akyol, M. Bozan, O. Ince, S. Aydın, **B. Ince**, 2018. Bioaugmentation with *Clostridium thermocellum* to enhance the anaerobic biodegradation of lignocellulosic agricultural residues. Bioresource Technology, 249, 620-625, doi: 10.1016/j.biortech.2017.10.040.

13. E. G. Özbayram, S. Kleinstauber, M. Nikolausz, **B. İnce**, O. İnce, 2018. Enrichment of lignocellulose degrading microbial communities from natural and engineered methanogenic environments, *Applied Microbiology and Biotechnology*, 102, 1035-1042, doi: 10.1007/s00253-017-8632-7.
14. E.G. Ozbayram, S. Kleinsteuber, M. Nikolausz, **B. İnce**, O. İnce , "Bioaugmentation of anaerobic digesters treating lignocellulosic feedstock by enriched microbial consortia", *Engineering in life Sciences* 18(7), DOI:10.1002/elsc.201700199, 2017
15. M. Bozan, Ç. Akyol, O. Ince, S. Aydin,**B. İnce**, 2017. Application of next-generation sequencing methods for microbial monitoring of anaerobic digestion of lignocellulosic biomass. *Applied Microbiology and Biotechnology*, 101, 18, 6849-6864, doi: 10.1007/s00253-017-8438-7.
16. Shahi, S. Aydin, **B. İnce**, O. Ince, "The effects of white-rot fungi *Trametes versicolor* and *Bjerkandera adusta* on microbial community structure and functional genes during the bioaugmentation process following biostimulation practice of Petroleum Contaminated Soil ", *International Biodeterioration & Biodegradation*, No. 114, 01/2017, s. 67-74, 2017
17. Yıldırım, O. İnce, S. Aydın, **B. İnce**, "Improvement of Biogas Potential of Anaerobic Digesters Using Rumen Fungi, *Renewable Energy*", *Renewable Energy*, Vol. 109, 2017, s. 346-353, DOI:10.1016/j.renene.2017.03.021, 2017
18. Shahi, **B. İnce**, S. Aydin, O. Ince, 2017. Assessment of the horizontal transfer of functional genes as a suitable approach for evaluation of the bioremediation potential of petroleum-contaminated sites: a mini-review. *Applied Microbiology and Biotechnology*, 101, 4341-4348, doi: 10.1007/s00253-017-8306-5.
19. Yıldırım, O. İnce, **B. İnce**, S. Aydın, "Biomethane production from lignocellulosic biomass enhanced by bioaugmentation with anaerobic rumen fungi", *Process Biochemistry*, 02/2017, DOI: 10.1016/j.procbio.2017.02.026, 2017
20. O. Ince, E. G. Ozbayram, C. Akyol, Ozgur Ince, **B. İnce**, "Composting practice for sustainable waste management: a case study in Istanbul", *Desalination and water treatment*, Vol. 31, No. 57, 07/2017, s. 14473-14477, 2017
21. E.G. Ozbayram, S. Kleinsteuber, M. Nikolausz, **B. İnce**, O. Ince, 2017. Effect of bioaugmentation by cellulolytic bacteria enriched from sheep rumen on methane production from wheat straw. *Anaerobe*, 46, 122-130, doi: 10.1016/j.anaerobe.2017.03.013.
22. C. Yangin-Gomec, G. Pekiyaş, T. Sapmaz, S. Aydin,**B. İnce**, Ç. Akyol, O. Ince, 2017. Microbial monitoring of ammonia removal in a UASB reactor treating pre-digested chicken manure with anaerobic granular inoculum. *Bioresource Technology*, 241, 332-339, doi: 10.1016/j.biortech.2017.05.070.

23. S. Aydin, E. Yildirim, O. Ince, **B. Ince**, 2017. Rumen anaerobic fungi create new opportunities for enhanced methane production from microalgae biomass. *Algal Research*, 23, 150-160.
24. S. Aydin, H.A. Karaçay, A. Shahi, S. Gökçe, **B. Ince**, O. Ince, 2017. Aerobic and anaerobic fungal metabolism and Omics insights for increasing polycyclic aromatic hydrocarbons biodegradation. *Fungal Biology Reviews*, 31, 2, 61-72.
25. M. Kolukirik, M. Yilmaz, O. Ince, C. Ketre, A. Istanbulu, **B. Ince**, "Development of a fast and low-cost qPCR assay for diagnosis of acute gas pharyngitis", *Annals of Clinical Microbiology and Antimicrobials*, 12/2016, s. 1-6, 2016
26. Akyol, S. Aydin, O. Ince, **B. Ince**, "A comprehensive microbial insight into single-stage and two-stage anaerobic digestion of oxytetracycline-medicated cattle manure", *The Chemical Engineering Journal*, No. 303, 11/2016, s. 675-684, 2016
27. Shahi, S. Aydin, **B. Ince**, O. Ince, "Reconstruction of Bacterial Community Structure and Variation for Enhanced Petroleum Hydrocarbons Degradation Through Biostimulation of Oil Contaminated Soil", *The Chemical Engineering Journal*, No. 306, 07/2016
28. Akyol, G. Turker, O. Ince, E. Ertekin, O. Ustuner, **B. Ince**, "Performance and microbial community variations in thermophilic anaerobic digesters treating OTC medicated cow manure under different operational conditions", *Bioresource Technology*, No. 205, 04/2016, s. 191-198, 2016
29. Coban, E. Ertekin, O. Ince, G. Turker, C. Akyol, **B. Ince**, "Degradation of oxytetracycline and its impacts on biogas-producing microbial community structure", *Bioprocess and Biosystems Engineering*, Vol. 7, No. 39, 03/2016, 2016
30. Turker, S. Aydin, C. Akyol, O. Yenigun, O. Ince, **B. Ince**, "Changes in microbial community structures due to varying operational conditions in the anaerobic digestion of oxytetracycline-medicated cow manure", *Applied Microbiology and Biotechnology*, Vol. 14, No. 100, 03/2016, s. 6469-6479, 2016
31. Akyol, O. Ince, Z. Cetecioglu, F. U. Alkan, **B. Ince**, "The fate of oxytetracycline in two-phase and single-phase anaerobic cattle manure digesters and its effects on microbial communities", *Journal of Chemical Technology & Biotechnology*, Vol. 3, No. 91, 02/2016, s. 806-814, 2016
32. S. Aydin, **B. Ince**, O. Ince, "Assessment of anaerobic bacterial diversity and its effects on anaerobic system stability and the occurrence of resistance genes", *Bioresource Technology*, No. 207, 01/2016, 2016
33. Z. Cetecioglu, **B. Ince**, D. Orhon, O. Ince, 2016. Anaerobic sulfamethoxazole degradation is driven by homoacetogenesis coupled with hydrogenotrophic methanogenesis. *Water Research*, 90, 79-89.

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35. Ç. Akyol, E.G. Ozbayram, O. Ince, S. Kleinstuber, **B. Ince**, 2016. Anaerobic co-digestion of cow manure and barley: effect of cow manure to barley ratio on methane production and digestion stability. *Environmental Progress and Sustainable Energy*, 35(2), 589-595.
36. O. Ince, E.G. Ozbayram, Ç. Akyol, Ö. Ince, **B. Ince**, 2016. Composting practice for sustainable waste management: a case study in Istanbul. *Desalination and Water Treatment*, 57, 14473-14477.
37. H. Coban, E. Ertekin, O. Ince, G. Turker, Ç. Akyol, **B. Ince**, 2016. Degradation of oxytetracycline and its impacts on biogas producing microbial community structure. *Bioprocess and Biosystems Engineering*, DOI 10.1007/s00449-016-1583-z.
38. Z. Cetecioglu, **B. Ince**, M. Gros, S. Rodriguez-Mozaz, D. Barcelo, O. Ince, D. Orhon, 2015. Biodegradation and reversible inhibitory impact of sulfamethoxazole on the utilization of volatile fatty acids during anaerobic treatment of pharmaceutical industry wastewater. *Science of the Total Environment*, 536, 667-674.
39. Shahi, S. Aydin, **B. Ince**, O. Ince, "Evaluation of microbial population and functional genes during the bioremediation of petroleum-contaminated soil as an effective monitoring approach", *ECOTOXICOLOGY AND ENVIRONMENTAL SAFETY*, No. 125, 2016, s. 153-160, DOI: 10.1016/j.ecoenv.2015.11.029, 2015
40. O. Ince, E. G. Ozbayram, C. Akyol, Ozgur Ince, **B. Ince**, "Composting practice for sustainable waste management: a case study in Istanbul", *Desalination and water treatment*, Vol. 31, No. 57, 2015, s. 14473-14477, 2015
41. Akyol, O. Ince, H. Coban, G. Koksels, Z. Cetecioglu, N. Ayman Oz, **B. Ince**, "Individual and combined inhibitory effects of methanol and toluene on acetyl-CoA synthetase expression level of acetoclastic methanogen, *Methanosaeta concilii*", *International Biodeterioration & Biodegradation*, Vol. 105, 2015, s. 233–238, doi:10.1016/j.ibiod.2015.09.013, 2015
42. S. Aydin, **B. Ince**, O. Ince, "Development of antibiotic resistance genes in microbial communities during long-term operation of anaerobic reactors in the treatment of pharmaceutical wastewater", *Water Research*, Vol. 83, 2015, s. 337–344, Elsevier, doi:10.1016/j.watres.2015.07.007, 2015
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45. S. Aydin, **B. Ince**, O. Ince, "The joint acute effect of tetracycline, erythromycin and sulfamethoxazole on acetoclastic methanogens.", *Water Science & Technology*, Vol. 71, 2015, s. 1128-1135, IWA PUBLISHING, doi: 10.2166/wst.2015.046., 2015
46. S. Aydin, **B. Ince**, O. Ince, "Application of real-time PCR to determination of combined effect of antibiotics on Bacteria, Methanogenic Archaea, Archaea in anaerobic sequencing batch reactors", *Water Research*, Vol. 76, 2015, s. 88–98, Elsevier, doi:10.1016/j.watres.2015.02.043, 2015
47. Z. Cetecioglu, **B. Ince**, M. Gros, S. Rodriguez-Mozaz, D. Barcelo, O. Ince, D. Orhon, "Biodegradation and reversible inhibitory impact of sulfametoxazole on the utilization of volatile fatty acids during anaerobic treatment of pharmaceutical industry wastewater", *Science of The Total Environment*, Vol. 536, 2015, s. 667–674, doi: 10.1016/j.scitotenv.2015.07.139., 2015
48. S. Aydin, **B. Ince**, Z. Cetecioglu, O. Arikan, E.G. Ozbayram, A. Shahi, O. Ince, "Combined effect of erythromycin, tetracycline and sulfamethoxazole on performance of anaerobic sequencing batch reactors", *Bioresource Technology*, Vol. 186, 2015, s. 207-214, ISSN: 0960-8524, ELSEVIER SCI LTD, DOI: 10.1016/j.biortech.2015.03.043, 2015
49. Akyol, O. Ince, Z. Cetecioglu, F. Ustun Kalkan, **B. Ince**, "Behavior of oxytetracycline in two-phase anaerobic cattle manure digesters and its effects on active microbial communities", *Journal of Chemical Technology&Biotechnology*, 2015, DOI: 10.1002/jctb.4649., 2015
50. S. Aydin, Z. Cetecioglu, O. Arikan, **B. Ince**, E. G. Ozbayram, O. Ince, "Inhibitory Effects of Antibiotic Combinations on Syntrophic Bacteria, Homoacetogens and Methanogens", *Chemosphere*, No. 120, 02/2015, s. 515-520, 2015
51. Z. Cetecioglu, **B. Ince**, O. Ince, D. Orhon, 2015. Acute effect of erythromycin on metabolic transformations of volatile fatty acid mixture under anaerobic conditions. *Chemosphere*, 124, 129-135.
52. Ö. Eyice, O. Ince, **B. Ince**, 2015. Monitoring the abundance and the activity of ammonia-oxidizing bacteria in a full-scale nitrifying activated sludge reactor. *Environmental Science and Pollution Research*, 22, 2328-2334.
53. S. Aydin, **B. Ince**, Z. Cetecioglu, E.G. Ozbayram, A. Shahi, O. Okay, O. Arikan, O. Ince, "Performance of anaerobic sequencing batch reactor in the treatment of pharmaceutical wastewater containing erythromycin and sulfamethoxazole mixture",

Water Science & Technology, Vol. 70, No. 10, 2015, s. 1625-1632, ISSN: 0273-1223, IWA PUBLISHING, 2015

54. E.G. Ozbayram, O. Arıkan, **B. Ince**, Z. Cetecioglu, S. Aydin, O. Ince, 2015. Acute effects of various antibiotic combinations on acetoclastic methanogenic activity. *Environmental Science and Pollution Research*, 22, 6230-6235.
55. S. Celikkol-Aydin, Z. Suo, X. Yang, **B. Ince**, R. Avci, 2014. Sharp Transition in the Immunoimmobilization of *E. coli* O157:H7. *Langmuir*, 30, 7755-7761.
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58. Z. Cetecioglu, **B. Kasapgil-Ince**, S. Azman, O. Ince, "Biodegradation of tetracycline under various conditions and effects on microbial community", *Applied Biochemistry and Biotechnology*, Vol. 2, No. 172, 2014, s. 631-640, 2014.
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2. Workshop on Microbial Ecology and Technology of Anaerobic Degradation, 08-09.09.2014, İstanbul
3. Workshop on Energy Efficient Technologies: **COST** Water 2020, 2014, İstanbul

4. Workshop on Microbial Ecology and Technology of Anaerobic Degradation, 08-09.09.2014, Istanbul
5. Identification and Treatment of Environmental Risks, Solid Liquids and Gas Wastes, Trainings on Pollution Prevention Studies, 1995-2014
6. Denaturated Gradient Gel Electrophoresis (DGGE) Applied Training Course, 14-15.10.2012, Istanbul
7. Fluorescent Onsite Hybridization Applied Training Course, 13-14.10.2012, Istanbul
8. Bioinformatics Practical Training Course, 07-08.10.2012, Istanbul
9. Cloning and Sequence Analysis Applied Training Course, 06-07.10.2012, Istanbul
10. Western Blotting Applied Training Course, 08-09.09.2012, Istanbul
11. 2-D SDS-PAGE Applied Training Course, 06-07.09.2012, Istanbul
12. RNA Detection and Counting with Reverse Transcription (RT) and Real-Time PCR Applied Training Course, 17-18.07.2012, Istanbul
13. DNA Detection and Counting with Real-Time PCR Applied Training Course, 16-17.07.2012, Istanbul
14. RNA Based Molecular Methods Applied Training Course, 26-27.09.2011, Istanbul
15. DNA Based Molecular Methods Applied Training Course, 24.09.2011 - 25.09.2011, Istanbul
16. RNA Based Molecular Methods Applied Training Course, 04-05.06.2011, Istanbul
17. DNA Based Molecular Methods Applied Training Course, 02-03.06.2011, Istanbul
18. ATHENS Program - Molecular Tools to Study Microbial Ecology, 15-19.03.2010, Istanbul
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22. Fluorescent On-Site Hybridization (FISH) Applications in Biotechnology Training Course, 18.06.2008 - 20.06.2008, Istanbul
23. Polymerase Chain Reaction (PCR), Cloning and Phylogenetic Analysis Applications in Biotechnology Training Course, 16.06.2008 - 17.06.2008, Istanbul
24. Biotechnology Polymerase Chain Reaction (PCR) - Real Time Polymerase Chain Reaction (Q-PCR) Applications Training Course, 30.01.2008 - 31.01.2008, Istanbul
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PATENTS

- File No. : 1490PCT10ES
Invention Title: METHOD FOR IMPROVING THE BIOGAS POTENTIAL OF

ANAEROBIC DIGESTIONS WITH RUMEN FUNGI

PCT Application No: PCT/TR2016/050550

Spain Application No: 201990040

Approved Date: 27. 02.2021

- File No. : 1490PCT11ES

Invention Title: A METHOD FOR IMPROVEMENT OF METHANE PRODUCTION FROM MICROALGAE

PCT Application No : PCT/TR2016/050558

Spain Application No : 201990041

Approved Date :27. 02.2021

- File No: 36576.01 2016/20350

Invention Title: DEVELOPMENT OF A METHOD FOR ECONOMIC IMPROVEMENT OF BIOMETHANE PRODUCTION FROM MACROALGES USING MICROBIOLOGICAL COCKTAIL (ANOP) CONTAINING RUMEN FUNGUS

Turkish Application Date: 30.12.2016

Approved Date: 06.03.2019

- File No: PCT/TR2017/050087

Invention Title: METHOD FOR BIOREMEDIATION OF PETROLEUM-CONTAMINATED SOILS

Application Date: 06.03.2017

Approved Date: 13.09.2018

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1. Ömer Uzun (2022-..) Biochar Mediated Anaerobic Co-Digestion of Food And Agricultural Wastes Within a Circular Economy Perspective
2. Aslınur Çalışıyor (2021-..) The Role of Mobile Genetic Elements on Surfactant Enhanced Bioremediation of Petroleum Contaminated Soil
3. İbrahim Halil Miraloğlu (2019-ongoing). Detection of Lignolytic Enzymes Belong To Microorganisms Biochemically Degrading Lignin And Cellulose In İgneada Floodplain Forest And Development Of Their Use In Anaerobic Digestion Technologies.
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7. Mahir Bozan, 2018. Biomethane potential of pre-treated macroalgae and corn stover by *Trametes versicolor* entrapped in Ca-alginate beads.
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